## ABSTRACT OF THE DISCLOSURE

A method and apparatus for electrochemically depositing a metal into a high aspect ratio structure on a substrate are provided. In one aspect, a method is provided for processing a substrate including positioning a substrate having a first conductive material disposed thereon in a processing chamber containing an electrochemical bath, depositing a second conductive material on the first conductive material as the conductive material is contacted with the electrochemical bath by applying a plating bias to the substrate while immersing the substrate into the electrochemical bath, and depositing a third conductive material *in situ* on the second conductive material by an electrochemical deposition technique to fill the feature. The bias may include a charge density between about 20 mA*sec/cm$^2$ and about 160 mA*sec/cm$^2$. The electrochemical deposition technique may include a pulse modulation technique.